

<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/604,986	PACAUT ET AL.
	Examiner Victor J. Taylor	Art Unit 2863

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 29 August 2003.
2.  The allowed claim(s) is/are 1-28.
3.  The drawings filed on 29 August 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

**DETAILED ACTION**

***Drawings***

1. The drawings were received on 29 August 2003. These drawings are approved.

***Prior Art***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

I. Art A of Tubel et al., US 2002/0066309 in class 73/152.54 is cited for the method for monitoring downhole parameters and tools utilizing fiber optics and teaches a method for monitoring downhole parameters for the operation and conditions of downhole tools on the drill stream12 in figure 1. He teaches steps for using electrically operated devices sensors and sliding sleeve valves 900 in figure 13 and teaches transmitting sensor digital data using fiber optic communications to transmit the measurement data in the borehole see paragraph 13 on page 1.

II. Art B of Boyle et al., US 2002/0193004 in class 439/577 is cited for the wired pipe joint with current loop inductive couplers 20 in figure 1 and teaches a low loss robust wired pipe joint used in the wired drill stream pipe using inductive current loop connectors in paragraph 40 on page 4. He further teaches connections useful for connections for various downhole electronics and low loss cable connections in paragraph 82 on page 6.

***Allowable Subject Matter***

3. Claims 1-28 are allowed.

4. The following is an examiner's statement of reasons for allowance:

With regard to claim 1, The prior art of record does not suggest or disclose the claimed combination for performing the diagnostics on a wired drill pipe telemetry system of a downhole drilling system most particularly the claimed method steps for "passing a signal through a plurality of drill pipe in the wired drill pipe telemetry system" ... [and] in combination with steps for "receiving the signal from the wired drill pipe telemetry system" ... [and] in combination with the peculiar claimed method steps for "measuring the parameters of the received signal" ... [in] combination with the "comparing steps for comparing the received signal parameters against a known reference for variation thereof whereby a fault in the wired drill pipe telemetry system is identified" preformed in the wired drill string or drill pipe is not found in the cited art of record.

The prior art A of Tubel et al., teaches a method for monitoring downhole parameters and tools utilizing fiber optics and teaches a method for monitoring downhole parameters for the operation and conditions of downhole tools on the drill stream<sup>12</sup> in figure 1. He teaches steps for using electrically operated devices sensors and sliding sleeve valves 900 in figure 13 and teaches transmitting sensor digital data using fiber optic communications to transmit the measurement data in the borehole see paragraph 13 on page 1.

The prior art B of Boyle et al., teaches the wired pipe joint with current loop inductive couplers 20 in figure 1 and further teaches a low loss robust wired pipe joint used in the wired drill stream pipe and teaches a method of using inductive current loop

connectors in paragraph 40 on page 4. He further teaches connections useful for connections of various downhole electronics and low loss cable connections in paragraph 82 on page 6.

Therefore, the prior art Tubel and The prior art of Boyle in combination or alone does not teach the present limitation of the claimed combination limitation.

Claims 2-13 are variously dependent on the allowed independent claim 1 and are allowed at least for the reason cited above.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

With regard to claim 14, The prior art of record does not suggest or disclose the claimed combination for performing the diagnostics on a wired drill pipe telemetry system of a downhole drilling system having a plurality of wired drill pipes most particularly the claimed method steps for "passing a signal through the wired drill pipe telemetry system" ... [and] in combination with steps for "receiving the signal from the wired drill pipe telemetry system" ... [and] in combination with the peculiar claimed method steps for "measuring one of a voltage and a current and a combination thereof of the received signal" ... [in] combination with the steps for "determining the impedance of the received signal and comparing the impedance of the received signal with the impedance of a known reference to identify a variation therefrom whereby a fault in the wired drill pipe telemetry system is identified" as preformed in the wired drill string or drill pipe is not found in the cited art of record.

The prior art A of Tubel et al., teaches a method for monitoring downhole parameters and tools utilizing fiber optics and teaches a method for monitoring downhole parameters for the operation and conditions of downhole tools on the drill stream<sup>12</sup> in figure 1. He teaches steps for using electrically operated devices sensors and sliding sleeve valves 900 in figure 13 and teaches transmitting sensor digital data using fiber optic communications to transmit the measurement data in the borehole see paragraph 13 on page 1.

The prior art B of Boyle et al., teaches the wired pipe joint with current loop inductive couplers 20 in figure 1 and further teaches a low loss robust wired pipe joint used in the wired drill stream pipe and teaches a method of using inductive current loop connectors in paragraph 40 on page 4. He further teaches connections useful for connections of various downhole electronics and low loss cable connections in paragraph 82 on page 6.

Therefore, the prior art Tubel and The prior art of Boyle in combination or alone does not teach the present limitation of the claimed combination limitation.

Claims 15-18 and 20-22 are variously dependent on the allowed independent claim 14 and are allowed at least for the reason cited above.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

With regard to claim 19, The prior art of record does not suggest or disclose the claimed combination for performing the diagnostics on a wired drill pipe telemetry system of a downhole drilling system having a plurality of wired drill pipe most

particularly the claimed method steps for "passing a signal through the wired drill pipe telemetry system" ... [and] in combination with steps for "receiving the signal from the wired drill pipe telemetry system with the signal received a time delay after the signal is passed" ... [and] in combination with the peculiar claimed method steps for "determining the time delay of the received signal" ... [in] combination with the comparing steps for "comparing the time delay of the received signal against the time delay of a known reference to identify a variation therefrom whereby a fault in the wired drill pipe telemetry system is identified" as performed in the wired drill string or drill pipe is not found in the cited art of record.

The prior art A of Tubel et al., teaches a method for monitoring downhole parameters and tools utilizing fiber optics and teaches a method for monitoring downhole parameters for the operation and conditions of downhole tools on the drill stream<sup>12</sup> in figure 1. He teaches steps for using electrically operated devices sensors and sliding sleeve valves 900 in figure 13 and teaches transmitting sensor digital data using fiber optic communications to transmit the measurement data in the borehole see paragraph 13 on page 1.

The prior art B of Boyle et al., teaches the wired pipe joint with current loop inductive couplers 20 in figure 1 and further teaches a low loss robust wired pipe joint used in the wired drill stream pipe and teaches a method of using inductive current loop connectors in paragraph 40 on page 4. He further teaches connections useful for connections of various downhole electronics and low loss cable connections in paragraph 82 on page 6.

Therefore, the prior art Tubel and The prior art of Boyle in combination or alone does not teach the present limitation of the claimed combination limitation.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

With regard to claim 23, The prior art of record does not suggest or disclose the claimed combination system for performing the diagnostics on a wired drill pipe telemetry system of a downhole drilling system most particularly the wired drill pipe comprising a communications link with "a signal generator operatively connectable to the communication link of the wired drill pipe telemetry system and the signal generator capable of passing a signal through the communication link" ...[and] in combination with "a gauge operatively connectable to the communication link and the gauge capable of receiving the signal from the wired drill pipe telemetry system and taking a measurement thereof" ...[and] in combination with the "processor capable of comparing the received signal with a known reference to identify variations therefrom whereby a fault in the wired drill pipe telemetry system is detected" and preformed in the wired drill string or drill pipe is not found in the cited art of record.

The prior art A of Tubel et al., teaches a method for monitoring downhole parameters and tools utilizing fiber optics and teaches a method for monitoring

downhole parameters for the operation and conditions of downhole tools on the drill stream12 in figure 1. He teaches steps for using electrically operated devices sensors and sliding sleeve valves 900 in figure 13 and teaches transmitting sensor digital data using fiber optic communications to transmit the measurement data in the borehole see paragraph 13 on page 1.

The prior art B of Boyle et al., teaches the wired pipe joint with current loop inductive couplers 20 in figure 1 and further teaches a low loss robust wired pipe joint used in the wired drill stream pipe and teaches a method of using inductive current loop connectors in paragraph 40 on page 4. He further teaches connections useful for connections of various downhole electronics and low loss cable connections in paragraph 82 on page 6.

Therefore, the prior art Tubel and The prior art of Boyle in combination or alone does not teach the present limitation of the claimed combination limitation.

Claims 24-28 are variously dependent on the allowed independent claim 23 and are allowed at least for the reason cited above.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 517-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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